

# ECOTEL<sup>®</sup> C6

# VIERLING



**A TeleControlling Device for Remote Querying, Monitoring and Controlling over the GSM 900/1800 Mobile Phone Network**

## Operating Instructions

Edition 1.5

**VIERLING Communications GmbH**

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# 1. Safety Information

## General Safety Instructions

This device has been constructed and tested in accord with DIN EN 60950/-1:2003 VDE 0805, "Institute for Safety in Information Technology". It left the factory in perfect condition with respect to safety-technology considerations.

In order to maintain this condition and to assure safe operations, the operator must observe the instructions and heed the warning notes contained in this manual of operating instructions.

ECOTEL® C6 should only be installed by a professionally trained electrician.

Interfaces are defined as follows in accord with DIN EN 41003 § 4.1.3:

	Power Supply	max. 30V DC
	Inputs I1 ... I4	max. 30V DC
	Relays R1, R2	max. 60V DC (42V AC ) 1 A

Maintenance and repairs on an open device may only be undertaken by professionally qualified personnel.

## Liability

Liability for damages are precluded that result from failure to heed the safety precautions specified. Based upon mandatory liability in accord with legal regulations governing product liability or other mandatory liability, such liability is not precluded, for example, in the event of life-endangering injuries, bodily injury or injury to health, or due to accepting a guarantee or procurement risks, or due to non-performance of essential contractual obligations.

However, any compensation for damages based upon non-performance of essential contractual obligations shall be limited to damages that are typical to such an agreement and which can be anticipated, with the exception of liability for intent or for the gross negligence of our legally appointed representatives or vicarious agents or because of injury to life, body or health; or because of the assumption of a guarantee or of procurement risks. A change in the burden of proof to the disadvantage of the user is not connected with the regulations cited.

## Transportation

The device should only be transported in its original packaging (protection against impact and shock).

If the device is brought into an operating location from a cold environment, then condensation can occur. Before starting operations, the device must be

absolutely dry. Thus, an acclimatization period of at least two hours must be observed.

## **Setting Up**

Protect the device from direct sunlight and heat.

## **Supply Voltage**

If the device is operated on a current source that can supply more than 15 watts, then the power consumption input of the device should be limited to a maximum of 15 watts by using appropriate protection (refer to Technical Data section).

If the device runs on a power supply unit that is plugged into the mains, then it should be installed in the proximity of an electrical outlet that is easily accessible since the power supply unit also serves as an isolating device from the mains circuit. Use only those power supply units that meet standards in accord with EN60950.

If the device is supplied by a battery, then a means of switching-off the current during emergencies should also be installed.

## **Connecting Lines**

Connecting lines should be laid so that they do not represent a hazard for pedestrian traffic. During electrical storms, connecting lines should neither be connected nor disconnected!

## **Antenna Input**

Measures that afford protection against lightning and electrical storms must be taken before using an external antenna. In particular, the antenna base must be grounded.

## **Damages**

Should the device be visibly damaged or if it has been subjected to moisture, operations should be stopped immediately for reasons of safety! In such an instance, take measures so that other persons are also prevented from operating the device.

## **Environmental Conditions**

This device may only be operated in a location where the specified environmental conditions are maintained (refer to "Technical Data"). Assure that foreign materials such as dust or liquids do not penetrate device openings.

## **Repairs**

Repairs may only be made by qualified personnel. Only replacement parts may be used that do not violate device safety stipulations.

Always unplug the power supply unit before opening the device!

## **System Expansion**

Install only those system expansions that have been expressly designed for this device. Using unauthorized expansions can damage the device or may violate safety specifications and regulations pertaining to radio interference suppression.

## **Cleaning**

Always unplug the power supply unit before cleaning the device.

When cleaning, do not use powdered detergents or agents aggressive to synthetic materials. Do not allow moisture to penetrate the device. A dry cloth is sufficient to clean the housing surface. If required, a damp cloth may be used that has been dipped in water with mild dishwashing liquid and wrung out.

## **Inserting the SIM Card**

Be certain to follow the instructions in the user manual under section 3.4 in order to avoid damaging ECOTEL<sup>®</sup> C6 as a result of static discharges.

## **Messaging with SMS**

When messaging (SMS/Fax/E-Mail), ECOTEL<sup>®</sup> C6 dispatches an SMS over the GSM network. However, GSM mobile network providers do not offer a guarantee that SMSs will arrive at their destination within a given time period. Therefore, messaging delays may occur or, in exceptional cases, a message may not arrive at its destination.

## 2. Introduction

### ATTENTION



*Before inserting the SIM card deactivate the PIN of the SIM card or use the specified PIN. See also page 31.*

### 2.1 Applications

ECOTEL<sup>®</sup> C6 can be used to

- Control devices and systems
- Query conditions and status quo
- Report specified events (alarming)
- Count impulses
- Query the status of impulse-counters

over the GSM Mobile Phone Network GSM900/1800 by using SMSs or telephone calls.

### 2.2 Components

The ECOTEL<sup>®</sup> C6 product package consists of the following:

- ECOTEL<sup>®</sup> C6 device
- 2 gray covering panels with 4 rubber feet
- 2 blue covering panels
- CD with Windows configuration program ECOTEL<sup>®</sup> C6 config
- Operating instructions
- Serial cable for configuration
- Short antenna
- SMA-FME antenna adapter <sup>1)</sup>
- Power supply unit <sup>1)</sup>
- DIN rail-assembly footing, including 4 screws <sup>1)</sup>

<sup>1)</sup> Not included with ECOTEL<sup>®</sup> C6(a) (is equal to CONRAD model)



In order to operate ECOTEL<sup>®</sup> C6, you will require:

- SIM card (card agreement or prepaid cards)
- GSM external antenna (only for conditions of poor reception).
- Laptop with RS232 serial interface for configuration purposes
- Electrical supply unit for ECOTEL<sup>®</sup> C6 (a)

The following is available as an accessory:

- GSM Dual Band External Antenna GSM900/1800 (including antenna cable) for conditions of poor reception.

## **2.3 Brief Description**

### **2.3.1 Controlling**

ECOTEL<sup>®</sup> C6 has two relay contacts (change-over contact) which can be remotely controlled with a mobile phone or over the Internet.

### **2.3.2 Querying**

ECOTEL<sup>®</sup> C6 has two digital and two analogue inputs. Their respective input conditions can be remotely queried with a mobile phone or over the Internet.

### **2.3.3 Reporting/ Alarming**

ECOTEL<sup>®</sup> C6 can be configured so that when a specified condition occurs, it automatically sends an SMS to the inputs. You are then informed (or alarmed) with respect to the current input condition with an SMS, fax or e-mail.

### **2.3.4 Counting Impulses**

ECOTEL<sup>®</sup> C6 has one digital input that can function as an impulse-counter-input. Each arriving impulse increases the ECOTEL<sup>®</sup> C6

internal counter by 1. After a power failure the counter starts with 0. The impulses are counted from 0 to 4.000.000.

## **2.3.5 Querying the Counter Status**

The counter status of ECOTEL<sup>®</sup> C6 can be remotely queried with a mobile phone or via Internet.

## **2.3.6 Configuration**

ECOTEL<sup>®</sup> C6 is easily configured over the serial interface by using the Windows program ECOTEL<sup>®</sup> C6 config, which is included in the product package. Remote configuration is also possible using a mobile phone and SMSs.

## **2.3.7 Internet**

It is also possible to control and query ECOTEL<sup>®</sup> C6 via Internet by sending and receiving SMSs from an internet service provider. Several internet pages provide this feature.

### 3. Starting-Up ECOTEL<sup>®</sup> C6

The following points must be clarified when starting operations for the first time:

- SIM card (card agreement or prepaid card)
- PIN for the SIM card
- Receiving conditions/ antenna location
- Installation at the assembly location
- Power supply
- Configuration with ECOTEL<sup>®</sup> C6 config program
- Connection of relays and inputs

#### 3.1 SIM Card

ECOTEL<sup>®</sup> C6 contains a GSM module similar to a mobile phone, and it also requires a SIM card. SIM cards can be used for both the GSM900 and the GSM1800 mobile phone networks.

**If SMSs are frequently sent**, then a favorable alternative is to use mobile phone card agreements with monthly basic rental charges, low SMS costs and generally unlimited validity.

**If SMSs are sent less frequently**, then the use of a prepaid card without basic rental charges is recommended. In this case, SMS costs are somewhat higher and validity is usually limited to either 6 or 12 months. After expiration of validity, the prepaid card must be replenished. Usually, this requires removing the card from ECOTEL<sup>®</sup> C6 in order to replenish it by using a mobile phone. Prepaid cards can be remotely reloaded. Information is available from the internet home page of your provider.

#### NOTE:



*Select a suitable SIM card for your particular needs. Scrutinize the various costs for SMS, SMS to fax and SMS to e-mail.*

## 3.2 PINs

When operating ECOTEL<sup>®</sup> C6, there are two different PINs. The first PIN secures access to the SIM card (SIM-PIN) while the second PIN protects ECOTEL<sup>®</sup> C6 from being used by unauthorized persons (SMS-PIN).

### 3.2.1 SIM-PIN

Protect your SIM card with a PIN. The SIM-PIN for your ECOTEL<sup>®</sup> C6 can not be freely selected. The PIN to be used is printed on the last page of these operating instructions. Insert the SIM card to be used for ECOTEL<sup>®</sup> C6 into a mobile phone and modify the PIN in accord with information provided. Details regarding activating and modifying a PIN can be found in your mobile phone operating instructions. Should you choose not to secure your SIM card, then the PIN function should be deactivated. Details in this respect are also available in your mobile phone operating instructions.

#### **NOTE:**



*For some providers (SIM cards), the PIN function can not be deactivated.*

#### **ATTENTION**



*The specified SIM-PIN should be correctly entered. After three attempts to log-in with an incorrect PIN, the SIM card will be blocked. A super-PIN is then required in order to reactivate the SIM card.*

### 3.2.2 SMS-PIN

The SMS-PIN prevents unauthorized use of ECOTEL<sup>®</sup> C6 over SMS. When the PIN identification function is activated, a PIN is required for controlling outputs and querying inputs, and it must appear at the beginning of every SMS sent to ECOTEL<sup>®</sup> C6. Refer to section 5 TeleControlling.

### 3.3 Reception Conditions/ Antenna Location

ECOTEL<sup>®</sup> C6 depends upon adequate receiving conditions in order to send and receive SMSs. Prior to installation, good estimates can be made with a mobile phone. First, insert the SIM card for ECOTEL<sup>®</sup> C6 in a mobile phone and then check-out reception conditions at several different points. If the mobile phone indicates adequate field strength, this is generally sufficient for ECOTEL<sup>®</sup> C6 receiving conditions as well.

#### **ATTENTION**



*Measures that afford protection against lighting and electrical storms must be taken before using an external antenna. In particular, the antenna base must be grounded.*

#### **NOTE:**



*Receiving conditions among the various mobile phone networks are usually different.*

Exact receiving conditions can be determined with ECOTEL<sup>®</sup> C6 and the ECOTEL<sup>®</sup> C6 config configuration program.

- Insert SIM card into ECOTEL<sup>®</sup> C6
- Connect short antenna
- Connect power supply
- Connect ECOTEL<sup>®</sup> C6 to laptop
- Install Windows ECOTEL<sup>®</sup> C6 config program and start
- Menu Status

The short antenna can be used if it is adequate for reception conditions prevailing at the assembly location. Minimum reception field strength app. –80 dBm.

Should reception conditions be insufficient, a GSM antenna will be required at an appropriate location. The antenna is then to be connected to ECOTEL® C6 using an antenna cable.

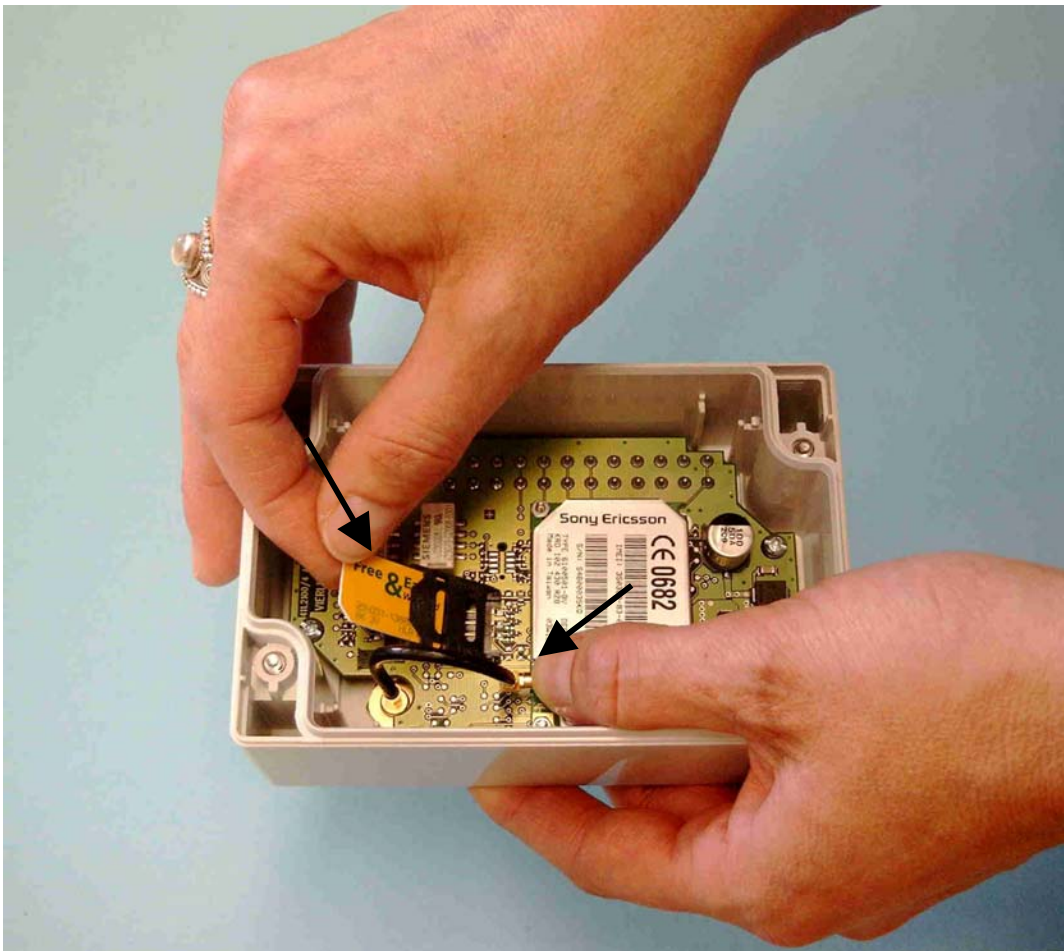
**NOTE:**



*Suitable antennas and antenna cable are available as accessories*

## **3.4 Inserting the SIM Card into ECOTEL® C6**

The power supply should be disconnected and section 3.2.1 SIM-PIN should be read before inserting a SIM card. Open the ECOTEL® C6 housing and insert the SIM card into the SIM card holder provided. In the process, touch the module plug as illustrated to discharge static electricity and thus avoid damaging the unit. In order to arrest the SIM card, shove the lid of the SIM card holder forwards.



*Illustration 1: Inserting the SIM card into ECOTEL® C6*

### **3.5 Mounting Options for Housing**

The universal ECOTEL® C6 housing offers three mounting options:

- Desk-top housing (rubber feet)
- Wall-mounted housing (screws)
- Control cubicle (DIN rail-assembly)

Mount the housing according to your requirements.

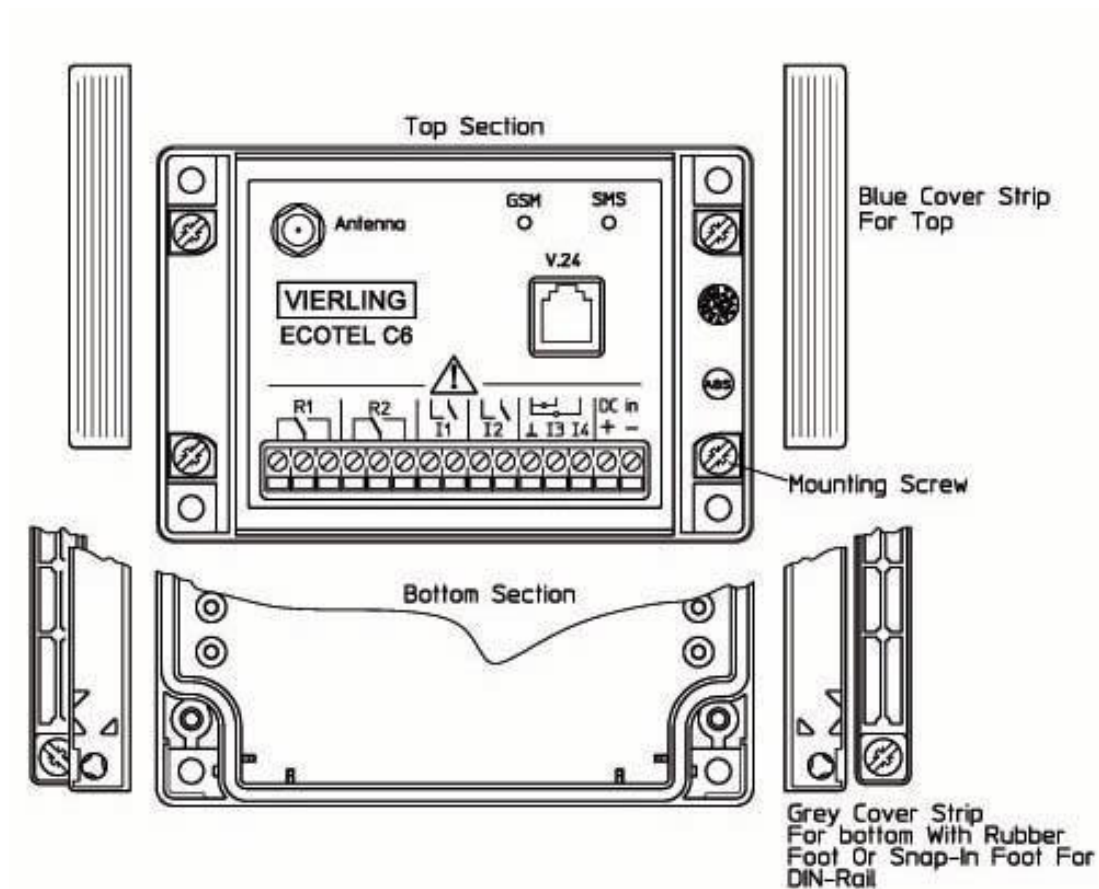


Illustration 2: Mounting the ECOTEL® C6 Housing

## 3.6 Interfaces

### ATTENTION



Observe VDE regulations when connecting relay contacts (R1, R2) and inputs (I1 to I4).

Connected voltages may not exceed 60V DC / 42 V AC (SELV-Electrical Circuit).

### 3.6.1 Power Supply

ECOTEL® C6 can utilize an existing, suitable power supply, or the power supply unit included in the product package may be used. In case



the original power supply unit is not being used, the power supply itself must be fuse-protected. Refer to section 7 Technical Data. The DC In input is protected against reversed connections.

### **3.6.2 Relays**

ECOTEL<sup>®</sup> C6 has two relays, R1 and R2, each with a change-over contact. Maximum current load for the contacts are:

- 2 A for 30 V turn-on voltage
- 1 A for 60 V turn-on voltage

### **3.6.3 Digital Inputs**

ECOTEL<sup>®</sup> C6 has two digital inputs, I1 and I2, for connecting potential-free contacts (make-contact or break-contact). When making or breaking contact, ECOTEL<sup>®</sup> C6 sends an SMS and thus informs/ alarms you of the current status of the inputs by using an SMS, a fax or an e-mail. In the last two instances, the SMS is converted into a fax or an e-mail (SMS to fax, SMS to e-mail).

Input I1 can also be configured as an impulse counter. In this event, switching-impulses arriving at the I1 input are counted in an internal counter.

Refer to section 5.3 Querying regarding the querying of input conditions or the counter status.

### **3.6.4 Analogue Inputs**

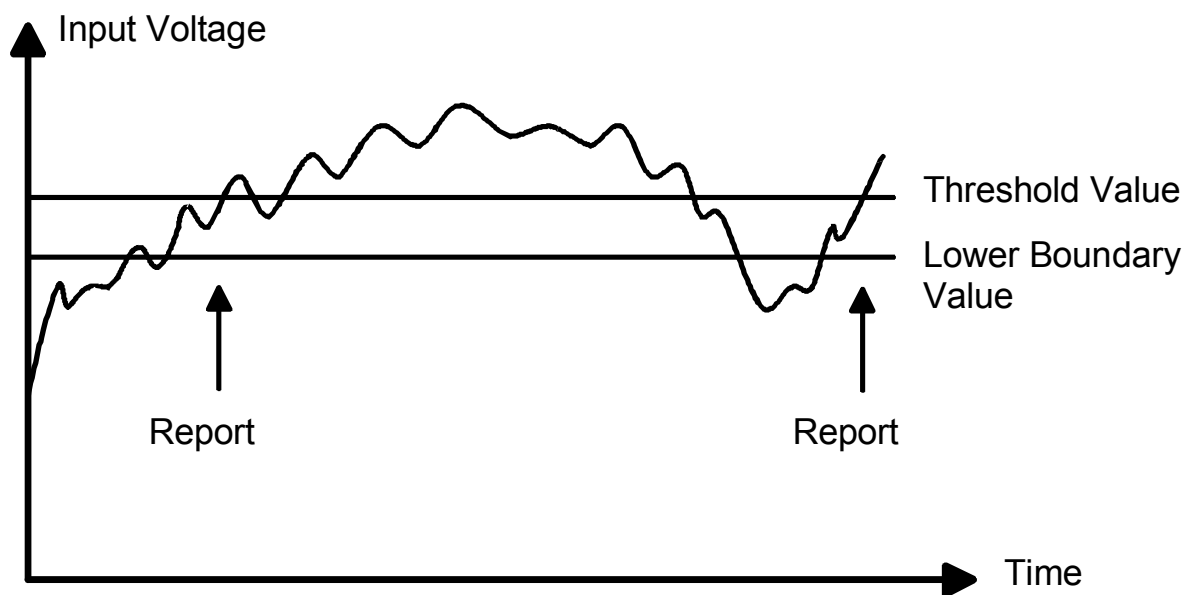
ECOTEL<sup>®</sup> C6 has two analogue inputs (I3 and I4) which emit a measuring voltage and are to be connected to sensors. When overshooting or undershooting a given voltage threshold, ECOTEL<sup>®</sup> C6 sends an SMS informing you of current input status via SMS, fax or e-mail. In the last two instances, the SMS is converted into a fax or an e-mail (SMS to Fax, SMS to e-mail). The input voltage range (measuring voltage) is:

- Input I3: 0 to 12.75 volts      Input I4: 0 to 25.50 volts.

## 3.6.4.1 Hysteresis

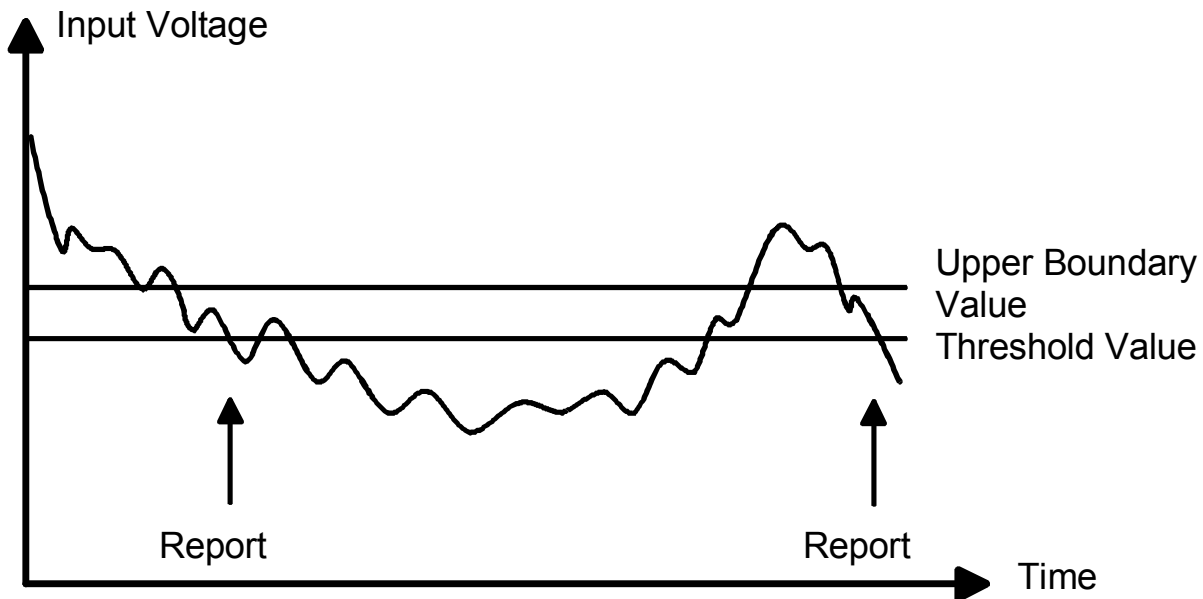
In order to avoid multiple reports resulting from small voltage-deviations about the threshold value, high and low threshold boundaries have been established.

Mode of operation when **overshooting** the threshold value: If the input voltage overshoots the lower boundary and then the threshold value, then ECOTEL<sup>®</sup> C6 sends a report.



*Illustration 3: Threshold value and lower boundary value*

Mode of operation when **undershooting** the threshold value: If the input voltage undershoots the upper boundary and then the threshold value, then ECOTEL<sup>®</sup> C6 sends a report.



*Illustration 4: Threshold value and upper boundary value*

Refer to section 5.3 Querying for information about querying input conditions.

### 3.6.5 Antenna

The antenna interface has been designed to directly connect the short antenna. If reception conditions are adequate, this antenna can be used. Where reception conditions are poor, an antenna must be connected using an antenna cable and adapter.

### 3.6.6 Serial Interface (V.24)

Serial interface V.24 is to be used when configuring ECOTEL<sup>®</sup> C6. It is to be connected to the laptop/ PC COM-Port by using the serial cable included in the product package accessories.

## 3.7 Display Elements

ECOTEL<sup>®</sup> C6 has two light-emitting diodes that are used to indicate current operating conditions.

The green "GSM" LED shows the operating condition.

"GSM" LED	Significance
Off	No power supply
On	SIM card not yet logged-in to the mobile phone network
Blinking	SIM card logged-in to the mobile phone network

Table 1: Significance of the green "GSM" LED

The red "SMS" LED indicates sending or receiving status.

"SMS" LED	Significance
Blinking	SIM-PIN not correct or no SIM card inserted or SIM card defective
On (appx. 50 s)	Starting-up, ECOTEL <sup>®</sup> C6 is not ready for operation
On (appx. 2-5 s)	ECOTEL <sup>®</sup> C6 is sending or receiving an SMS
On (appx. 2-5 s)	ECOTEL <sup>®</sup> C6 is receiving a phone call
off	ECOTEL <sup>®</sup> C6 in normal state

Table 2: Significance of the red "SMS" LED

### **ATTENTION**



*If the green LED "GSM" is on for more than 1 minute, the GSM module cannot log-in to the mobile phone network. The reception field strength is too low. Refer to section 3.3.*

### **3.8 Configuration**

When starting up this device for the first time, a configuration is necessary in order to install the desired ECOTEL<sup>®</sup> C6 functions. In general, this is accomplished over the serial interface using the ECOTEL<sup>®</sup> C6 config configuration program.

Remote configuration is also possible. This requires sending several SMSs to ECOTEL<sup>®</sup> C6.

The configuration installs the following ECOTEL<sup>®</sup> C6 parameters:

- SMS-PIN Function
- SMS Central
- Fax Prefix
- E-Mail Gateway
- Relay Controlling Options
- Input Characteristics
- Input Reporting Options
- Report Text
- Options for Querying Input Conditions
- Start Report

The ECOTEL<sup>®</sup> C6 config configuration program can continue to be used for measuring reception field strengths and for viewing the current configuration status.

In order to configure ECOTEL<sup>®</sup> C6, connect it to a power supply and then connect it to your laptop/PC with the serial connecting cable which is included in your product package accessories.

## **4. Configuration Program**

Further details regarding the configuration program can be found in the Help function of the program.

### **4.1 Installation**

Place the CD that is included in the accessories into the disk drive of your laptop/PC. Start the setup.exe program. Then follow the installation instructions.

### **4.2 Program Start**

Start > Program > ECOTEL > ECOTEL C6 config

## 5. TeleControlling

After the desired (configuration) functions have been transmitted to ECOTEL<sup>®</sup> C6 via the configuration program, the device is ready for operations after logging-in.

### ACHTUNG



*Pay attention to upper and lower case in the following examples.*

### 5.1 Start Report

If the Start Report function is activated (refer to configuration program), then after switching on the current and successfully logging into the mobile phone network of ECOTEL<sup>®</sup> C6, you will receive an SMS (Start Report) sent to a mobile phone. The report consists of a status summary (relay conditions R1, R2 and input conditions I1 to I4) plus the start-report text that was previously configured. For information regarding the meaning of the status summary, refer to section 5.3 Querying.

#### Example of a Start Report:

**Module Start, I1=0, I2=off, I3=0, I4=0, R1=off,  
R2=off,**

### 5.2 Controlling

#### 5.2.1 Controlling with SMS

Relay contacts R1 and R2 can be controlled from a mobile phone with an SMS. This procedure requires that you send a control-SMS to the telephone number of the SIM card in ECOTEL<sup>®</sup> C6. A control-SMS consists of one or more control-commands.

The relay is specified with "R1=" or "R2=". The desired action of the relay is specified with either "on", "off" or "imp".

- on the relay responds
- off the relay releases
- imp the relay responds for the impulse period configured

The PIN identification serves to prevent unauthorized controlling. If the SMS PIN identification for controlling with SMSs has been activated, then the control-SMS must begin with the SMS-PIN. Otherwise, the control command will not be processed.

### 3 Examples of a control-SMS:

- **R2=on**
- **R1=on,R2=off**
- **1234,R1=on** (SMS PIN-Identification)

Using the control-command

- **S=?**

you can request a status query from ECOTEL<sup>®</sup> C6 and will then receive a switching confirmation after the control-SMS.

### Example of a control-SMS with switching confirmation:

- **R1=on,R2=off,S=?**

## 5.2.2 Controlling with Phone Calls

Relay contact R1 can be controlled from a mobile phone or any telephone by calling ECOTEL<sup>®</sup> C6. This procedure requires that you call the SIM card telephone number of ECOTEL<sup>®</sup> C6 and that you wait at least for the first two rings. ECOTEL<sup>®</sup> C6 will then switch relay contact R1 for the length of the impulse period that has been configured.

CLI identification serves to protect against unauthorized access. If CLI identification has been activated for controlling with phone calls, then the call must originate from the telephone number which was



designated in the configuration. Otherwise, the control-command will not be processed. Furthermore, the CLIP function in the mobile phone (or fixed network phone) must be activated.

## **ATTENTION**



*CLI-identification will function only if ones own telephone number is forwarded (CLIP). Not every telephone is capable of forwarding its own telephone number. Your telephone network provider can activate this feature.*

## **NOTE:**



*You can reduce costs using "Controlling with Phone Calls". Costs are not incurred in this case because ECOTEL<sup>®</sup> C6 doesn't accept the call.*

## **5.3 Querying**

### **5.3.1 Status Query with SMS**

Using a mobile phone, it is possible to query the status of relays R1 and R2, the status of inputs I1 to I4 and the counter status. This procedure requires sending a control-SMS to the telephone number of the SIM card in ECOTEL<sup>®</sup> C6.

In this case, control-SMSs for the status query consist of only one control-command.

- S=?

ECOTEL<sup>®</sup> C6 then sends the current status of R1, R2, I1 to I4 and the counter status to a telephone number/ e-mail address or to the dispatcher of the control-SMS.

SMS PIN-identification serves as protection against unauthorized status query. If the PIN-identification has been activated for status query with SMSs, then control-SMSs must always begin with the SMS-PIN.

## Examples for control-SMSs:

- S=?
- 1234 , S=? (SMS PIN-Identification)

## Example for status

R1=on , R2=off , I1=off , I2=on , I3=123 , I4=148 ,

## Significance:

- Relay R1: relay R1 responds
- Relay R2: relay R2 releases
- Input I1: contact open
- Input I2: contact closed
- Input I3: measuring voltage  $123 \times 0.05 \text{ volts} = 6.15 \text{ volts}$
- Input I4: measuring voltage  $148 \times 0.1 \text{ volts} = 14.8 \text{ volts}$

### 5.3.2 Status Query with Calls

Status can also be queried from a mobile phone or any telephone by calling ECOTEL<sup>®</sup> C6. This procedure requires calling the telephone number of the SIM card in ECOTEL<sup>®</sup> C6 and then waiting for at least two rings.

ECOTEL<sup>®</sup> C6 will then send the current status of R1, R2, I1 to I4 and the counter status either to a telephone number/ e-mail address that has been predetermined in the configuration or directly to the caller.

For information regarding protection from unauthorized status queries, refer to section 5.2.2 Controlling with Phone Calls.

## 5.4 Reporting/ Alarming

If one of the alarming conditions should occur at the inputs of I1 to I4 (as defined in the configuration), then ECOTEL<sup>®</sup> C6 will automatically send a message (SMS) and will inform/ alarm you about the alarm condition with an SMS, with a fax or with an e-mail. The message consists of a status summary (the condition of relays R1, R2 and the condition of inputs I1 to I4) plus the actual message text.

### Example

**R1=on,R2=off,I1=off,I2=on,I3=123,I4=148,**

**Reporttext x**

While the SMS is being sent (about 2 seconds), ECOTEL<sup>®</sup> C6 can not immediately react to other alarm conditions at inputs I1 to I4. If the alarm condition persists, that SMS will only be sent after the first SMS has been dispatched.

## 6. Summary of Commands

<b>R1=on</b>	Switch-on relay R1, R2 unchanged
<b>R2=off</b>	R1 unchanged, switch-off relay R2
<b>R1=on R2=on</b>	Switch-on relays R1 and R2
<b>R2=imp</b>	Relay R1 unchanged, switch-on R2 for the impulse period configured
<b>S=?</b>	Status request
<b>xxxx S=?</b>	Status request xxxx = SMS-PIN
<b>xxxx R1=on</b>	Switch-on relay R1, R2 unchanged xxxx = SMS-PIN
<b>R1=on,R2=on,S=?</b>	Switch-on relay R1 and R2, status request (switching confirmation)

Table 3: Summary of Commands

Pay attention to upper and lower case in all examples.

## 7. Technical Data

<b>Height x Width x Depth:</b>	60 mm x 120 mm x 80 mm
<b>Weight:</b>	Approx. 300 g

<b>Power Supply Unit:</b>	Primary: 100 - 240 volts AC, 50 - 60 Hz Secondary: 15 volts DC, 1 Ampere
<b>Power Supply</b>	DC In: 5 - 30 volts (reversal protection)
<b>Maximum Power Consumption:</b>	At 5 volts 1.3 Amperes At 12 volts 0.6 Amperes At 30 volts 0.2 Amperes
<b>Fuse protection DC In:</b>	From 5 to 10 volts: 1,5 A semi-time lag From 10 to 15 volts: 1,0 A semi-time lag From 15 to 30 volts: 0,5 A semi-time lag Necessary only if the original power supply unit is not being used
<b>Average Power Consumption (stand-by):</b>	About 0.13 Watts (no relays responding) About 0.65 Watts (2 relays responding)

<b>Outputs R1 and R2:</b>	Relay contacts 2 A at 30 V turn-on voltage 1 A at 60 V turn-on voltage
<b>Digital Inputs I1 and I2:</b>	For potential-free contacts Max. connective length 30 meters
<b>Analogue Inputs: I3 and I4</b>	Measurement inputs, resolution 8 bits Max. connective length 30 meters Max. input voltage 30 volts Direct impedance: > 10 K ohms Measuring range I3: 0 to 12.75 volts Measuring range I4: 0 to 25.50 volts
<b>Antenna Connection:</b>	SMA (socket)
<b>Serial Interface:</b>	Western socket, 8-pole, V.24

<b>Operating Temperature</b>	- 25 degrees to + 55 degrees Celsius
<b>Storage Temperature</b>	- 40 degrees to + 85 degrees Celsius
<b>Relative Humidity:</b>	5 to 95 %, non-condensing

## 8. Index of Abbreviations

All abbreviations used in these operating instructions are explained in the following table.

<b>CLIP</b>	<b>C</b> alling <b>L</b> ine <b>I</b> dentification <b>P</b> resentation;
<b>CLI</b>	<b>C</b> alling <b>L</b> ine <b>I</b> dentification
<b>LED</b>	<b>L</b> ight- <b>E</b> mitting <b>D</b> iode;
<b>PIN</b>	<b>P</b> ersonal <b>I</b> dentification <b>N</b> umber
<b>SIM</b>	<b>S</b> ubscriber <b>I</b> ntity <b>M</b> odule
<b>SMS</b>	<b>S</b> hort <b>M</b> essage <b>S</b> equences

*Table 4: Index of Abbreviations*

The PIN to protect the SIM card for ECOTEL<sup>®</sup> C6 can not be freely selected. Please use the PIN specified below or else deactivate the PIN function.

Cut off the lower part of this page and keep it in a safe place.

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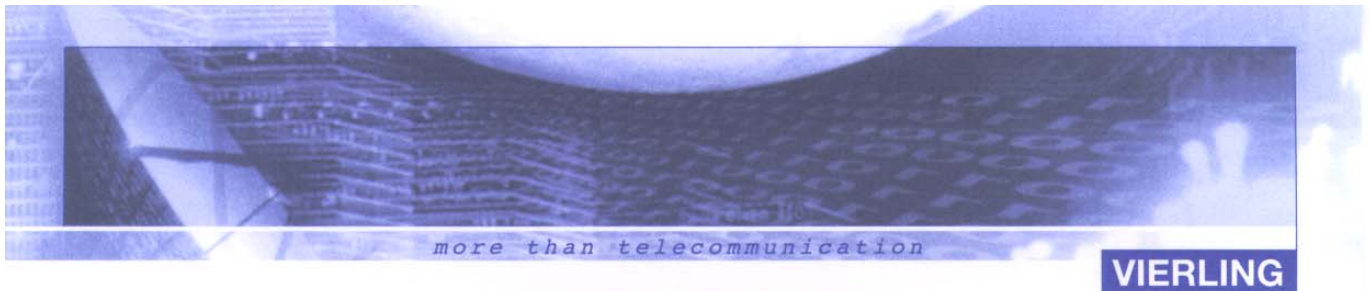
ECOTEL<sup>®</sup> C6

The PIN for the SIM card is

6 7 8 9







## Declaration of Conformity

I hereby declare that the product

ECOTEL C6

(Name of product, type or model, batch or serial number)

satisfies all the technical regulations applicable to the product within the scope of Council Directive 1999/5/EC:

EN 55022:1998 Class B

EN 55024:1998

EN 61000-3-2:1995 + A1:1998 + A2:1998 + A14:2000

EN 61000-3-3:1995

EN 60950:1992 + A2:1993 + A1:1993 + A3:1995 + A4:1997 + A11:1997

(Title(s) of regulations, standards, etc.)

### MANUFACTURER or AUTHORISED REPRESENTATIVE:

#### - Address:

Vierling Communications GmbH

Pretzfelder Straße 21

D-91320 Ebermannstadt

Germany

This declaration is issued under the sole responsibility of the manufacturer and, if applicable, his authorised representative.

#### - Point of contact:

Volker Rudolph, Phone: +49 9194 / 97 - 247, Fax: +49 9194 / 8906

(Name, telephone and fax number)

Ebermannstadt 2003-06-12

(Place, date of issue)

Werner Vierling

(Signature)

Werner Vierling, Managing Director

(Name and title in block letters)